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## ABSTRACT

This paper reviews the research that has been done on mass media effects in health communication: breakthroughs in treatment, rising costs of medical care, innovations in the organization of health care, governmental involvement, the rise in malpractice litigation, and so on. The conceptual framework employed proposes a continuum of audience involvement--in some studies, audience reaction is no more than implied, while in others, audience interaction is examined to some degree. This framework sets the stage for the paper's main thesis: that methods need to be employed in media-effects studies so that audience interaction may be taken into full account. It is contended that more attention needs to be focused on the communication network in the study of health communication and on the role of mass communication in general. (KS)

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## THE ROLE OF MASS MEDIA IN HEALTH COMMUNICATION

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## The Role of Mass Media in Health Communication

The growing prominence of health and medicine--as a topic of public discussion, as an area of activity taking up more and more of the nation's\* resources, and as a factor of our well-being--has been extensively chronicled in our mass media. Breakthroughs in treatment, rising costs, innovations in the organization of health care, governmental involvement and the rising ferment of malpractice litigation have been followed extensively by the mass media.\*\* It has long been documented that this coverage is of great interest to readers and has been avidly absorbed by them (Gallup, 1957).

Space and time devoted to health material reflects, of course, the belief of editors that it is news. Those within the health professions recognize the media as an important means by which they may enlist public cooperation and support. At the same time, preventive medicine efforts are receiving more attention and support, prompted by the rapidly escalating costs of medical intervention. Health care associations are proclaiming prevention a priority item. With an emphasis on preventive medicine goes an escalation of support for health education. A National Center for Health Education has been formed under the aegis of HEW's Center for Disease Control and the National Health Council. Most current health legislation provides for some funding of health education components. PL 94-317, enacted in June of this year.

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\*We recognize our bias toward American coverage and views of the mass media. But, considering the patterns of information flow, we think American examples will be more meaningful to foreign audiences than vice versa.

\*\*Such matters are also covered, of course, by media specializing in health and medicine. For purposes of conceptual focus, we will confine our discussions to the mass media of undifferentiated news interest--general newspapers and magazines, radio and television...

calls for the formulation of "national goals, and a strategy to achieve such goals, with respect to health information and health promotion, preventive health services, and education in the appropriate use of health care."

In any discussion of disseminating health information and the need to affect the health behavior of the public, the actual and potential roles of the mass media have long been acknowledged. However, the roles that are visualized for the mass media in health communication need to be examined in the light of what is known about media effects.

It is the purpose of this paper to review the research that has been done on mass media effects in health communication. The conceptual framework employed is along a continuum of audience involvement from studies where audience reaction is no more than implied, to studies that finally take audience interaction into account.\* This, in fact, is generally the line along which mass media effects studies have evolved over a period of years. This framework also sets the stage for the paper's main thesis: that methods need to be employed in media effects studies so that audience interaction may be taken into full account. This is based on the contention that more attention needs to be focused on the communication network in the study of health communication--and in mass communication more generally--in order to reach full understanding of the role of mass media.

#### Direct Influence Studies

On our continuum of media effects studies that leads ultimately to taking the audience's role fully into account, the opposite end is governed

\*We postulate a continuum rather than a hierarchy because it is not our intention to suggest that heuristic, methodological, chronological or any other kind of merit accrues as one moves along the continuum. A study's value does not depend on the place it occupies on the continuum.

by an assumption of direct influence, i.e. the audience is a target to be aimed at, and the outcome is a hit or a miss. At the risk of carrying the analogy too far, we might point first to studies that concentrate on observing the patterns of fire and a priori examination of the ammunition (health messages): what happens in the target area is merely assumed. For example, a study of a commercial television channel in Detroit (Barnum, 1975) found that 7.2 per cent of the channel's content was health related and, of this, only 30 per cent was "useful information." The remainder--at least in the judgment of the researcher--was inaccurate, misleading or both. Another example is Taylor's (1957) content analysis of the mental health content of the mass media. He found that the broadcast media did better than the print media, and that portrayal of therapists and patients tended toward "good guy" and "bad guy," respectively. Kent (1963), focusing on mass magazines' coverage of the same topic, was severely critical of their "name-dropping and emphasis on sensational aspects of mental problems."

Beginning to move along the continuum, other studies are confined to measurement of knowledge gain, with the behavioral effects of acquiring the information again implicit. Pratt (1956) investigated the effects of media ~~coverage~~ of Eisenhower's coronary thrombosis, and concluded: ". . . Patients learned approximately as much from the mass media dissemination of information about that disease when the President had it as they did from associates who had it, and significantly more than they learned from physicians when they themselves had it." Other such studies have investigated public knowledge of psychiatry (Redlich, 1950), health resources (Brightman, et al., 1958), heart disease (Riedel, Etchhorn and Morris, 1959), specific diseases (Samora, Saunders and Larson, 1962), and public health issues (Rosenstock, et al., 1966).

The preponderance of studies of media effects, at least until quite recently, have been based on a form of direct influence model. That is, as in all the studies mentioned above, certain message variables and target audiences are identified, and one learns that, in a given set of circumstances, there was a demonstrable knowledge increase (or perhaps just that the information was "successfully disseminated"). There is a characteristic reluctance to generalize to other situations, and to deal with the audience motivations that are at issue.

At the first significant guidepost of our continuum, audience reaction is taken into account. That is, at this point behavior change is recognized as the most meaningful outcome variable. Conn (1974) described an elaborate education program on venereal disease in Washington, D.C., which was evaluated in terms of the amount of coverage gained in local news media and, more importantly, in terms of the increase in the number of persons screened and/or treated for VD in local clinics. Kobil (1975), looking at commercial television efforts on health, came to the discouraging conclusion that there are no programs making "consistent and entertaining" efforts to reach mass audiences with basic health information while at the same time trying to motivate good health behavior. Casting further gloom, he said: "In our parallel research, we found that health education efforts by other media, and by private and public agencies, usually had little impact on the public, particularly those with the least education."

### Recognizing Interaction Effects

Among those who study mass media effects, the conclusion reached more than 20 years ago by such pioneering researchers as Lazarsfeld and Berelson, that the capacity of the media to influence behavior was severely limited, had become something of an article of faith. The classic "limited effects" statement was made by Klapper in 1960, after a comprehensive review of early research efforts: "Mass communication ordinarily does not serve as a necessary and sufficient cause of audience effects, but rather functions among and through a nexus of mediating factors and influences."

Only recently, researchers have begun to argue that this conclusion was based on inadequate evidence, in that it is based only on direct conversion effects, i.e., information → learning → belief change → behavior change. Researchers now point to a large variety of other effects that have been studied in recent years. McLeod, Becker and Byrnes (1973) say:

The previous dominance of persuasive effects is . . . the reflection of the dominant place experimental attitude change research has had in the field until recent years.

\* The second common focus is . . . a more differentiated concept of media exposure, looking at types of content used, motives for use, etc. . . . These studies tend to point to interactive effects of media rather than simple main effects by using theoretical propositions combining levels and qualities of media variables with those of social structure and interpersonal communication.

It is important to note that, to deal with interactional rather than direct effects is to deal with effect limitations in a different, but functionally important, sense. That is, in this case, one is looking at entire groupings of variables that mediate message effects simultaneously but differently in different combinations. The incorporation of interaction effects is the next significant point on our continuum.

There are evidences of the recognition of the interaction effects of source, message, channel and receiver variables extending back for

some time in the health communication research literature. For example Knutson, some years ago (1959), called for research on the motivations of health and medical behavior that affect message receptivity. Rosenstock (1959), investigating the effectiveness of a polio vaccination campaign, credited two audience characteristics--"personal readiness" (individuals' judgment that the threat was real and they were personally susceptible), and "situational" factors (personal convenience and the effort required). The latter, of course, relates to an early insight of diffusion researchers, (Rogers, 1962), that acceptance of an innovation or new concept depends to some extent on how conveniently it can be adopted. Yeracaris (1962) found acceptance by high schoolers of an appeal for tuberculosis testing depended on compatibility with their values, attitudes, and practices. Alexander (1976) found evidence, in a study of heart disease prevention, that lesser success among the disadvantaged was due to differential availability and accessibility of the relevant information.

A number of researchers--e.g., Clausen et al. (1954), Tyroler et al. (1965), Cornely and Bigman (1961)--have documented the importance of maternal influence on health behavior.

A rather elementary approach incorporating interactional effects is represented by studies identifying factors that govern acceptance of health messages. For example, Cannell and McDonald (1956) found that non-smokers were more likely to accept evidence of a smoking-lung cancer relationship if they were highly educated, while the opposite was true for smokers. Wade and Schramm (1969), reporting on a 1958 National Opinion Research Center study, found that women and the better-educated are more likely to attend to health messages in the media, while non-whites and the less educated are more likely to get health information from television. They reported a significant relationship between

knowledge of health and reading about it in print media, but not between knowledge and viewing health programs on television.

All such factors become variables mediating the effectiveness of mass media health strategies.

McAlister, reporting on one of the more notable attempts to use mass media in affecting health behavior (1976), the Three-Community Stanford Study on heart disease prevention, indicated that television messages alone could bring changes in health behavior, but were much more effective when coupled with interpersonal messages and expert counseling. Tagliacozzo and Ima (1970), studying the relationship between knowledge of illness and health behavior, concluded that efforts to teach patients must "not only address themselves to communicating medically approved ways of conceptualizing illness but, simultaneously must influence other definitions and conditions which motivate patients to give medical care more central importance."

At issue in limiting the mass media's capacity for influencing health behavior are such attitudes as the one uncovered by Stephenson (1971). He found that, among relatively well educated people, learning about the risks of heart disease, cancer and stroke is sufficient effort; one then knows what his chances are, and there's really little more one can do about it.

Warner (1973), looking at the relative importance of the influence of message content vs. the audience's perceived social distance from the communicator, concluded that "the question of social distance is very important and the problem of program development by middle-class minds, delivered by middle-class people to working-class target groups, must be raised."

Mendes (1965) identified an entire set of factors that determine public participation--and thus can act as barriers--in community action programs. These factors are structural (roles, statuses, organizational memberships), cultural (group attitudes, beliefs and values), and socio-psychological (interpersonal influence, personal attributes, and motivations). Mendes saw these factors as having primarily a negative effect on community programs, e.g., comprehensive neighborhood clinics, particularly among the lower socio-economic groups on whom preventive health programs tend to focus. All such factors could serve as mediating variables in determining the effectiveness of persuasion via the media.

Swinehart (1968) found some audience characteristics interacting to reduce the effectiveness of fear appeals in motivating health behavior. Using varying headlines intended to increase or decrease anxiety on articles about heart disease and tuberculosis, and subjects highly susceptible to these diseases (all over 65), he found more preference for the articles with supposed anxiety-producing headlines; in a comparison of the amount of worry elicited by ten specified health problems with the amount of interest in information on these problems, he found an almost linear positive relationship between amount of worry and amount of interest. He offered four possible explanations: 1) seeking information may be a substitute for action (one is reminded of Stephenson's "knowing is enough" factor), 2) avoidance may be manifested as selective forgetting rather than choosing the less threatening topic, 3) the threat (e.g., a headline reading, "Tuberculosis Risk Higher for Older Men and Women") may not have been extreme enough, and 4) people over 65, aware they are in a high-risk group, develop a tolerance for information about health threats.

Concerning Swinehart's second explanation alternative, Sears and Freedman (1967) concluded there is no evidence in the literature on selective exposure for a "general psychological preference" for supportive information and that, in fact, in some situations people may even prefer evidence contradicting the position they had taken.

Thus, willingness to accept the message, for whatever reasons, is an important factor in determining the effectiveness of mass communication on health. This was also documented in two studies for NBC reported by Coffin (1963), which indicated that, contrary to expectations, better educated viewers have less exposure to TV information programs because they do not choose to watch as many such programs as the less educated "heavy viewers." One would strongly suspect that it is the medium, not the message, where this problem resides, since it is television that is held in disfavor among the well educated (at least by their testimony), not health messages.

#### Who Sets the Agenda?

In the foregoing, we have moved along our continuum from direct-influence models of mass media effects to a focus on interaction effects where studies show that, for health messages as well as for other mass media applications, the flow of influence cannot be looked at unidirectionally. We should finally like to extend this thought (and the continuum) to one more important area of mass communication research activity, perhaps helping to point the way to a worthwhile field of future health communication investigation.

Recently, there has been considerable interest in what has been labeled the "agenda-setting function" of the mass media. Like the earlier "gatekeeper" concept, agenda setting can be seen as a reflection of the traditional observation that, "the news is what editors say it is." Gatekeeping has to do with the process of the editor choosing

items for inclusion in his news product; agenda-setting focuses on some of the consequences of his choices. Specifically, the question is to what extent the mass media's portrayal of the world--what the media say is happening that is "newsworthy," and how prominently one event is featured in relation to others--influences and determines the public's perception of the salience of these matters. As McLeod, Becker and Byrnes (1973) point out, agenda-setting effects are determined from comparisons--between the relative effects of what the media say, and "some objective assessment of reality" or the perceptions of those involved, for example. Research supporting the agenda-setting hypothesis has involved comparing audiences' perceptions of important news events with media portrayal of the issues in given time periods (e.g., McCombs and Shaw, 1972; McLeod, Becker and Byrnes, 1973; Weaver and Spellman, 1974). The testing proposition is not complex, but it is attended by some rather difficult methodological problems; McLeod, Becker and Byrnes have offered a highly informed discussion of these.

Certainly it is not difficult to support the agenda-setting hypothesis. There can be little doubt that the public's views about health are shaped to an important extent by what is portrayed in the media--information on the incidence of disease, mortality and morbidity, issues of cost, preventive health measures. Not only the information itself, but how it is "played" is consequential; the public is expert in decoding the multi-level indexing system the newspaper uses to indicate the relative importance of news events, e.g., the prominence in recent weeks in media accounts of the fatal incidences of "legionnaire's disease" in Philadelphia vs. the number of traffic deaths (probably more) that occurred in that city over the same time period.

The negative aspect of the agenda-setting function, i.e., that the media also choose what will be omitted from the news, also is recognized in the literature of agenda setting, but it has not been given prominence there. Since newsmen readily admit that the majority of news stories begin with press releases from public information/public relations offices, it appears as though this aspect deserves more consideration. It is a common complaint that the news media feature the negative--crime, catastrophes, the spectacular error--rather than routine accomplishment of goals and proper functioning of systems. The result is the drawing of a rather clearly negative picture of the society the media survey. In health news, we are more apt to hear of the malpractice suit and the rise of the cost of health care, than of the successful surgical procedure or the effective enforcement of sanitation codes. But, given the extensive organizational control of medicine, we may also hear of the organ transplant available only to a very few, while the shortcomings of an emergency medical system, affecting many, are kept from public scrutiny. The difficulties of researching this aspect of agenda-setting, of course, are that the data base for a valid comparison with media portrayals is no less than a comprehensive view of reality, and it is difficult for a media audience to identify what they are missing. Clearly, both aspects of the agenda-setting concept, the effects of covering or not covering events and activities, deserve the attention of health communication researchers.

One persistent question concerning evidence for the agenda-setting function is the question of sequence: Does association between media content emphasis and audience perceptions of news event importance necessarily mean the media are affecting the audience, or might the media merely be reflecting audience priorities? The problem is recognized

by those who have postulated the agenda-setting hypothesis; McLeod, Becker and Byrnes call it the "reverse causation assertion." They, like McCombs and Shaw (1972 and 1974), cite other studies that discount this possibility by documenting gaps between the media's gatekeeping performances and audience values and perceptions. The findings in such studies, however, are often equivocal on the point. For example, Funkhouser (1973) showed that news coverage tended to peak ahead of actual related events in the case of several major news events of the 1960's supporting the hypothesis that the media helped set the agenda for the events. However, the findings applied only to "event-based" issues (Vietnam war, crime, urban riots, student unrest), and did not cover a number of other major news issues identified by Funkhouser, Tipton, Haney and Baseheart (1975), testing the agenda-setting hypothesis in a state and local political campaign, found some support in the case of newspapers, but they found as much evidence that media reflect public concern as that they influenced it. They concluded: "Adding measurement over time . . . indicates that showing a positive relationship between media coverage and public mention is not in itself sufficient to argue conclusively for a media agenda-setting hypothesis." Martin, O'Keefe and Nayman (1972) found some association between editors' perceptions of their communities' consensus and the news play given a story, and substantial accuracy on the part of editors in perceiving their publics on some topics. Chaffee and Izcaray (1975) found no significant correlations between media content and audience priorities in a Venezuelan study.

Certainly there is enough such evidence to warrant continued investigation of the reverse causation explanation to the agenda-setting hypothesis. The point is significant because of the relationship

of such an explanation to the position taken by Brouwer and Stephenson that the proper focus for mass communication research is on "the public domain, in common conversations about events, opinions about issues, in discussions and meetings everywhere" (Stephenson, 1972). This position brings us to the end of our journey across the continuum we have used to provide direction for this discussion; the continuum began with an implicit, non-reactive mass audience and ends with the audience as the very initiator of the communication process.

Brouwer (1967), working his way generally along the same route traced by our continuum, arrives at the study of the informal system of mass communications--conversations and folklore--as the ne plus ultra of effects studies because, he says, perception of group opinion "is often the basis of individuals' reactions instead of a projection of them." Brouwer adds:

The primary phenomenon is the existence of a group in the public which is interested in a given subject area . . . . This group engages in mutual conversations on such topics [as public affairs], and also engages in media use with respect to such topics, bringing the news up in conversations.

Brenner and Mauldin, applying the concept to an examination of media coverage of the Lt. Calley case, said (1974):

Corresponding to the factualizing process in mass media is a verification process among the general public, involving the selection, interpretation and reinforcement of opinions, attitudes and the like. The verification process follows social and interpersonal roles involving group stability and continuity, and interpersonal and individual benefits. These rules are made and maintained, not in the mass media, but in the daily give and take of face-to-face communication, in concourses of communication.

In our model . . . mass media are viewed as growing out of concourses of communication and are indeed nurtured by the subjective interests represented in such communication.

In other words, the global process of informal public conversation and folklore should be the focus of research, because it is at once the source and the product, of greater actual and theoretical interest than

the mediating and disseminating functions of the mass media. As a literal application of the admonition to focus on folklore, one might examine the current situation of folk medicine: With growing recognition (prompted by continued popular use and discussion) that it can serve a complimentary rather than adversary role to scientific medicine in providing health care (Meyer, et al., 1973), folk medicine is beginning to gain media coverage. It is thus the kind of "emergent phenomenon" Brouwer would have us study. He advocates following it through the mass communication structure, observing how the values and folklore of various groups impinges on this passage, and how it develops and perhaps eventually recedes in the process.

Stephenson also contends that the public, through its informal discourse, has taken over a major part of the agenda-setting function. In coverage of science--including health and medicine--he refers to this state of affairs as secularization. He said (1971):

That scientists should be increasingly alert to the place of science in modern life is to be expected. But lay opinion is important, too, about science, not merely because poor regard for science may result in loss of tax support for research and development, but because in a profound sense there are positions about which the public has a competency no less than that of scientists. The layman can express an opinion about what is good, and bad, about science with almost as much justification as the best of scientists . . . . It is surely important to come to terms with such viewpoints, and, if possible, to see better public perspectives.

Brouwer said that the most relevant mass communication question is not, "How will this individual be affected by that item of communication?" It is, "How will this program, etc., fare in the process of mass communication?"

With the entire health care delivery system in a state of upheaval, being reorganized into such agencies as health maintenance organizations, professional standards review organizations, and health services agencies; and with the advent of significant preventive medicine and health education programs in heart, cancer and diabetes, surely the opportunities to follow Brouwer's and Stephenson's admonitions are open. There should be no lack of activity at this end of the continuum.

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